Neurological Correspondence.

Medico-Legal Society.—Dr. Finnell on Chloroform Administration; Dr. Mann on Moral Responsibility; Mr. Cephas Brainard, Points in Law and Medicine. *Neurological Society*—Dr. E. C. Seguin, Bulbar Paralysis; Dr. Spitzka, General Paresis; Discussions.

NEW YORK CITY, Dec. 26, 1877.

MR. EDITOR:—I have the pleasure of forwarding much that has occurred in neurological and medico-legal circles, during the last three months, which, I think, will be found of interest and importance. I had hoped to have sent you several more valuable papers, but they are undergoing revision by their authors.

I would call especial attention to the question of the manner, consequences and responsibility of the administration of anæsthetics, and particularly to the remarks by legal gentlemen, as set forth in the discussion of Dr. Finnell's paper.

THE MEDICO-LEGAL SOCIETY.

Dr. T. C. Finnell, in a paper before this society, contended that physicians and surgeons should be held to a stricter accountability in the administration of anæsthetics. He was of the opinion that they were not handled with the skill and judgment which their dangerous properties required. So many young men were employed in administering them that many lives were recklessly sacrificed. It was unquestionably the fault of the surgeon who trusted what was an important duty to inexperienced hands. The uncontrovertible signs of approaching danger were not sufficiently watched—such as the condition of the pulse and respiration. Anæsthesia was adopted with the object of producing an insensibility to pain, whereas in almost every case an insensibility bordering on death was usually the result, so that the patient often died even before the knife was used by the surgeon.

Dr. Finnell believed that all members of the profession should be held responsible, as the time was not far distant when lawyers—even their associates of the same society—would be bringing suits against them for malpractice.

A physician in administering chloroform, which results fatally, in Dr. Finnell's opinion, ought to be considered as the responsible agent of causing death, and he thought it would be beneficial to the profession were some law enacted which would take them to task for culpable negligence.

In the majority of cases which had come under the doctor's observation, the surgeon was an independent factor, leaving the responsible work to an assistant. Every case should be treated carefully, and forceps, or any other instrument, should not be used until counsel had been taken from some colleague showing the necessity thereof; for it was a great habit of surgeons because the patient was under the influence of anæsthesia, to use force, thus endangering his recovery. This was the theory of Prof. Gurney, who was utterly opposed to allowing the whole system to be prostrated.

The doctor concluded by advocating more moderation in the use of anæsthesia.

Prof. Hamilton thought that Dr. Finnell had shown much courage in attacking what was commonly considered by the profession at large as the favorite means of alleviating pain. There is no remedy perhaps within the knowledge of man which seems to have accomplished so much good, and for which so great indebtedness is felt as for the various forms of anæsthetics; but Dr. Finnell has dared to throw a shadow of doubt upon them. He has dared to intimate that there is danger in their use; and he is right—they are dangerous agents. Whether the surgeon is to be held responsible under the law or not, is a question which the world must decide. The essayist thought that surgeons should be held responsible for deaths occurring under their use. Prof. H. was not sure but that he was right, if they did not teach others of this danger. He assumed the position that no agent capable of annihilating pain can be discovered which will not at the same time compromise life and health. The very annihilation of sensation itself impairs the health of the organs of the body; he had no question about it, and often during the administration of these agents, nothing but God's providence prevents them from being plunged into eternity! But, on the other hand, there are many things to be said in favor of its use. The main lesson to be learned is caution.

Daniel S. Riddle, Esq., said, as regards the enactment of further laws on this subject, it was not necessary. There are sufficient laws already. The difficulty is in enforcing them. If there is carelessness on the part of the doctor, he should be held responsible. It is the same with lawyers. It belongs to the profession of medicine to say whether these agents have been carelessly used; and if they have been carelessly used, it is their duty to produce, as well as to indicate, the person who uses these great powers carelessly. "If we lawyers," he remarked facetiously, "find out that you are carelessly using these things, it is our duty to "pitch in!"

Mr. Coroner Ellinger thought it would be a hard matter to hold doctors responsible, because it is hard to state scientifically where the responsibility can rest. It ought at least to be shown that there was conscious negligence in the performance of duty. The condition of the patient should be taken into account, and that must be left to the discretion and knowledge of the attending surgeon. He thought that the medical student ought to be taught the danger of the agent he employs, how and when to use it judiciously, and he should be required to secure a certificate to the effect that he has been so instructed before being let loose upon the public. The public would then know that he possesses a knowledge of the agent which he employs. Besides, the physician would be conscious of a certain moral responsibility, for he held that the moral responsibility which every medical gentleman must feel is greater than the responsibilities placed upon him by the laws of the land.

Dr. Finnell further remarked that when he graduated in medicine, twenty-seven years ago, together with another student, he was in the habit of administering ether for one of the best surgeons America ever knew—Gross, of Philadelphia. It was Dr. Gross' business to attend to the operation, and it was Dr. F'.s business to administer the anæsthetic. He was in the habit of "sousing" the patient, and how much damage and mischief he did in ten years he cannot begin to say. He advocated the proper instruction of the student in the use of anæsthetics; but the surgeon should always supervise their administration.

Dr. C. S. Wood thought from the remarks made that we ought to get down on our knees and call on God almighty for mercy! Every one will admit that more lives have been saved by the use of anæsthetics than have been destroyed by them. He believed that at least ten lives had been saved from shock to the nervous system, which precedes and accompanies an operation, where one had been destroyed by anæsthetics.

Jacob F. Miller, Esq., agreed with those who advocated care in the use of these agents. Man is living in the midst of dangerous forces, and will continue to use them though of necessity many deaths occur; but in order to rest a case against the user, it is necessary to show negligence. Negligence is the gist of the action. The physician, surgeon, or lawyer, contracts for the ordinary skill and care of his profession. He does not contract for any extraordinary skill. The law does not hold him any more responsible than that. It would be unreasonable to do so, because few persons could safely practice their profession, and if any person should use anæsthetics, and the patient should die, that is not sufficient to charge him with the responsibility. He thought all would admit that if a man not having the ordinary skill of his profession, should by unskillful administration of anæsthetics cause the death of the patient, he should be prevented from doing further damage by a suit for malpractice. Would it not be better to stop him by such procedure? Shall a man be allowed to use such dangerous forces just as he pleases—let the consequences be what they may? People consult physicians because they say they have the requisite skill to use these things. They hold themselves out to the community as having this skill; and they ought to possess it if they do not, and harm results from it, they ought to be held responsible. The coroner says that physicians are actuated by moral responsibility—which is just no responsibility at all! The quack will go on with his practices until he is stopped by the law. Where is his moral responsibility? What does he care? His practices only go to show that he has no moral responsibility. That lawyers should check such practices, is due to the profession, to the public, and to God! But before they take a case of malpractice, they ought to be convinced that there is malpractice.

It may be all very well to say that negligence is the gist of an action. If it cannot be shown that there is negligence, the case should not be taken; for when the case arrives at the courts, you must show that the defendant is guilty of neglect; and that is done by calling upon a physician who is able to say where negligence has been committed, and that he is guilty of it. This evidence is necessary—lawyers cannot get along without it.

Mr. Max. F. Eller spoke of the *fact* that for any action as many "experts" could be obtained by one side as the other—provided enough money is paid for such *expert* testimony! Some will say the patient should have been notified of the danger; others, that he ought not. Some will say the chloroform killed him; others, not. For that reason he thought that before making any more laws regarding the proper administration of anæsthetics, those which already exist should be administered in a better manner; and physicians should be a little more careful how they administer anæsthetics. With all due respect to Dr. Finnell—although he had never held himself up as a physician—yet he did not think "sousing" a patient was quite the correct thing! Therefore he thought the need was not that there should be more law, but that there should be more care. That is the remedy; and it lies with the doctors themselves to correct the evil.

Mr. Eller referred to the popular fallacy that chloroform could be used successfully for the purpose of effecting robbery. He thought that that delusion ought to be dispelled; for the time between the actual administration of chloroform and the period of annihilation of sensation is sufficiently long to render the accomplishment of the object impossible. Such a plea is used by criminals to shield themselves from the consequences of their own crimes.

Dr. E. C. Mann, of this city, read a paper on Mental Responsibility, and on the Diagnosis of Insanity in criminal cases. The main points of the paper are the following:

At the present day medico-legal cases are becoming very frequent, in which it is necessary to ascertain as to the insanity of a person accused of a criminal act, in its relation to his civil capacity and responsibility for criminal actions, and also

as to feigned or concealed insanity. It becomes, therefore, a very interesting question as to what test of insanity the law should recognize as a valid defense in criminal cases. This question, although one which it seems difficult to settle satisfactorily, and which judges, lawyers and medical experts are constantly disputing, assumes every day greater interest and wider significance, owing to the increase of insanity in our country disproportionate to the increase of population, which has taken place during the past twenty years, and which will continue to take place. Without inserting dry statistics, it is sufficient to say that a comparison of the increase of population from 1850 to 1870, with the increase of the number of the insane during the same period, reveals an increase of insanity over that of population of about 12 per cent. In the foreign elements this is due to marked changes in the habit of living, the changes of food, increased intemperance, working more indoors, living in badly ventilated tenements, and disappointments in not succeeding in business, etc., as they had expected to do in America, which are causes, all of which combined, tend to impair health, break down the nervous system, and tend insensibly toward insanity in the offspring. The increase of insanity among our own population is due largely to a change from a vigorous, well-balanced organization, to an undue predominance of the nervous temperament, which is gradually taking place in successive generations. The educational pressure on the young to the neglect of physical exercise, the increasing artificial and unnatural habits of living, the great excitement and competition in business, are all tending to induce and multiply nervous diseases, many of which must terminate in insanity. These causes and the evils resulting from them, are propagated by the laws of inheritance in an aggravated and intensified form. Insanity is also appearing gradually at an earlier age than formerly. In former years the average period at which the greatest number became insane ranged between the ages of thirty and forty, but an analysis of statistics shows that this average age is coming on at an earlier period, generally appearing between the years of twenty and thirty. This is owing to hereditary influences, which have gradually become intensified by the violation of

physical laws during early life, want of proper training, or too high pressure in education, and is also due largely to the great mental activity and strain upon the nervous system that appertain to the present age and state of civilization, and which tend to a rapid decay of the nervous system. With many persons it is but a step from extreme nervous susceptibility to downright hysteria, and from that to overt insanity. The question of mental responsibility in its relation to criminal cases, is one of great interest, and presents a wide field for study and investigation. The facts of criminal psychology have led the writer to regard the impulse of criminal natures in the light of natural laws, and there is, beyond all doubt, an anthropological change which lies at the foundation of criminal propensities. There is a deficient cerebral organization which lies at the foundation of these criminal natures, which occasions the disposition to an abnormal moral constitution. The dislike of work and the love of enjoyment are impulses, which, when combined, lead especially to crime — when that other constitution or development is wanting which is necessary to the foundation of a powerful feeling of what is right. A further fundamental element, which stands in psycho-physical contrast to dislike of work, is an excessive physical consciousness of strength, which leads to arrogance, and thereby to the pleasure of measuring strength against the weak. This impulse leads to the love of bullying, cruelty and murder, if the higher intellect is absent which should turn the feeling of strength in a right direction, and there is also absent a complete ethical consciousness which should prevent misuse of power. This ethical weakness may be congenital, as has been remarked, or it may arise from deficient education. In the domain of vices we meet with, a peculiar condition of the central nervous system, which results in a temporary criminal impulse returning with a certain regularity. Such criminals are temporarily seized with the deepest remorse, and are fortified with best resolutions. They behave for a time in the most exemplary manner until they relapse again, which relapse is unanimously attributed by them to an irresistable impulse. This state of *moral epilepsy* is of great significance in the psychology of crime, as a physiologist is led to institute

a comparison between such cases and several states of disease, in which a peculiar type is observable, consisting in the fact that attacks of illness of more or less duration alternate with more or less long, and generally for a time preponderant, healthy intermissions. In a broad sense, one may designate all these pathological states as *epileptiform*, hence the term "*Moral Epilepsy*," which has been adopted above. Leaving this interesting question of the psychology of crime, to proceed with the diagnosis of insanity in criminals, we would ask if the true basis for jurists to proceed upon is not *the protection of the existence of normal persons against the ethically degenerate?* And the necessary degree of this protection is, most certainly, an essential measure for the severity of the punishment. The first trial of note where there was the question of insanity advanced, was in 1723, when the trial of Arnold for shooting at Lord Onslow occurred. Although it was shown that Arnold had been of weak understanding from his birth, and that he was doubtless insane, the jury brought in a verdict of guilty, and Arnold would have been executed had it not been for the intercession of Lord Onslow. The language of the charge to the jury in this case was in conformity to the rule laid down by Lord Hale, that partial insanity does not excuse a person from the consequence of his act, and that only a total deprivation of reason can furnish such excuse. In the year 1800 the celebrated trial of Hatfield, for shooting at the king in Drury Lane Theatre, excited much interest. Although it was proved that in 1793 Hatfield, who was a dragoon, had received a number of severe wounds which had caused partial insanity, so that he was dismissed from the service, and that since that time he had had periodic attacks of insanity, and had been confined as a lunatic, the prosecuting attorney laid down the established rule, that a total absence of memory and understanding could alone shield the prisoner from punishment, and appealed to the jury for a conviction on that ground. It was only through the brilliancy of the advocate, (afterward Lord Erskine) that the prisoner was acquitted. This trial had a good effect upon the judiciary, as in the year 1812, in the trial of Bellingham for the murder of Spencer Percival, Lord Mansfield laid down the law that the

capability of distinguishing between right and wrong was the test for determining the prisoner's responsibility, thus discarding the old theory of an entire absence of all mental power and substituting this in its place. Afterward the theory of a general knowledge between right and wrong was modified, and the element introduced that the prisoner must know the difference between right and wrong at the time of, and with regard to the particular act for which he is on trial, in order to render him responsible, and this test has been preserved to the present time. In the early history of our own country the same barbarism in the treatment of the insane prevailed which darkens the pages of English history. In Gov. Winthrop's History of New England, the case of Dorothy Dalbye is mentioned. She was executed for killing her child. She was, beyond all doubt, an insane woman, but this fact was not recognized by Gov. Winthrop, who says of her that "she was so possessed with Satan that he persuaded her by his delusions, which she listened to as revelations from God, to break the neck of her own child that she might free it from future misery." Such was the ignorance and prejudice of the early history of our country. We are at the present day very far from a correct understanding of the workings of the insane mind, for in the recent trial of Scannall the law was laid down as enunciated by the Court of Appeals in 1865 in case of Willis v. The People, which held that a person was not insane who knew right from wrong, and that the act he was committing was a violation of law, and wrong in itself. This theory of right and wrong is utterly inadequate to meet a large class of cases. There are certain cases familiar to all specialists in insanity which suffer from impulse in insanity with a homocidal or suicidal monomania. These patients, without appreciable disorder of the intellect, are impelled by a terrible *vis a tergo*, a morbid, uncontrollable impulse, to desperate acts of suicide or homicide. These patients are often fully aware of their morbid state, appreciate perfectly the nature of the act towards which they are impelled, and feel deeply the horror of their situation, and yet if not prevented by restraint, will inevitably committ acts of suicide or homicide. A very remarkable case was under the care of the

writer, of a man who would at stated times acknowledge that he felt an irresistible desire to kill some one, and would voluntarily enter an asylum and remain there until this morbid impulse had passed away, which was generally a period of one or two months. He has often told the writer that his life was made miserable by the idea that at some time this overwhelming impulse would come upon him so suddenly that he should commit some desperate homicidal act, but is not prepared to voluntarily incarcerate himself in an asylum for life, as his lucid intervals sometimes lasted for months at a time. The law as laid down at present would not decide this man to be insane, as he fully appreciates the difference between right and wrong, and the nature and consequences of any homicidal act that he may in the future commit. Such cases, which are not at all uncommon, serve to show what fearful injustice may be done under the name of justice, when the conclusion is based upon a metaphysical test which is proved by medical observation to be false in its application to the unsound mind.

There is still another form of insanity denominated "Moral Insanity," in which the intellectual faculties are intact, no delusions or hallucinations existing, but where the moral sense seems utterly obliterated. Such persons have no true moral feeling. This is disorder of the mind produced by disease of the brain, and is an unquestionable form of insanity, as it often precedes other forms of insanity, in which intellectual derangement is well marked, as acute mania or general paralysis. In some of these cases there is a modified responsibility, the degree of such responsibility being determined by the particular circumstances of each individual case. One difficult but important question to be solved is, as is the civil and criminal responsibility of women who plead insanity before courts of justice, and who are often afflicted with kleptomania, pyromania, or who are infanticides, as a result of sexual trouble and disease of the pelvic organs. Such women under all reasonable conditions are entitled to the benefit of the doubt, because of their defective mental integrity, caused perhaps by pregnancy, or by the subsequent emotional excitement attending parturition, which intensifies the cerebral disorder in a brain already morbidly active. With women, extreme nervous sus-

ceptibility readily lapses into insanity. In the sexual evolution, in the parturient period, in lactation, strange thoughts, extraordinary feelings, unreasonable appetites, criminal and suicidal impulses, may haunt a mind at other times innocent and pure. It is probable also that young unmarried women guilty of killing their own new-born offspring, are so distracted by conflicting feelings, sharpened to morbid acuteness by the great physiological movement of parturition, as to be hardly responsible for their acts. We come now to the question of the diagnosis of insanity. In most diseases we examine physical signs and symptoms, and determine by our senses the existence of such diseases. In insanity, on the contrary, we have to be guided chiefly by our knowledge of the normal functions of the mind, and in an examination have to rely on our intellect, rather than on our senses; although, of course, the latter are called in to assist us. It is, however, very often extremely difficult to decide with certainty, as medical experts are expected to do, as to the existence of mental disease. In making an examination of a person accused of crime, and in whom insanity is suspected, the person should be visited by the medical examiner, who should draw him into a pleasant conversation, and inquire as to previous attacks of insanity, hereditary history, then into any predisposing causes of insanity, such as intemperance, vocation, habit, etc., which may have operated in the production of insanity. Also as to injuries of the head or spine, which may have occurred, sunstroke, etc. The nervous system should then be examined for the existence of any such diseases as paralysis, epilepsy, catalepsy, or hysteria. The different senses beginning with sight should also be examined, and in this way it may be discovered if there are hallucinations or illusions pertaining to any of the senses. A great many cases are on the border line which separates sanity from insanity, and it often requires the nicest discrimination to determine whether such a patient has passed this border line. The writer would suggest a series of eight questions, which, if adopted by jurists in criminal cases, would prove a most efficient and just test as to the existence of insanity in any given case, viz.:

1. Have the prisoner's volitions, impulses, or acts been de-

termined or influenced at all by insanity, and are his mental functions—thought, feeling and action, so deranged, either together or separately, as to incapacitate him for the relations of life?

2. Does the prisoner come of a stock whose nervous constitution has been vitiated by some defect or ailment calculated to impair its efficiency or derange its operations?

3. Has the prisoner been noticed to display mental infirmities or peculiarities which were due either to hereditary transmission or present mental derangement?

4. Has the prisoner the ability to control mental action, or has he not sufficient mental power to control the sudden impulses of his disordered mind, and does he act under the blind influence of evil impulses which he can neither regulate nor control?

5. Has the act been influenced *at all* by hereditary taint which has become intensified, so that the morbid element has become quickened into overpowering activity, and so that the moral senses have been overborne by the superior force derived from disease?

6. Was the act affected by, or the product of insane delusion?

7. Was the act performed without adequate incentive or motive?

8. Does the prisoner manifest excitement or depression, moody, difficult temper, extraordinary proneness to jealousy and suspicion, a habit of unseasonably disregarding ordinary ways, customs and observances, an habitual extravagance of thought and feeling, an inability to appreciate nice moral distinctions, and finally, does he give way to gusts of passion and reckless indulgence of appetite?

Some, or all of these are found, generally, in connection with transmitted mental infirmity. It may be argued that these mental defects signify not mental unsoundness, but human imperfection. Certainly if we take these manifestations, any one of them singly and alone, we cannot claim such a one as invariably an indication of insanity, but, on the other hand, under certain circumstances, each one of them may be an unmistakable sign of insanity, or rather of a morbid cerebral

state, which may readily lapse into insanity. The disappointments and calamities of life obviously act with greater effect upon an unstable mental organization, these causes of disturbance meeting with a powerful, co-operating cause in the constitutional predisposition. Sometimes a crime, even when there have been no previous symptoms to indicate disease, marks the period when an insane tendency has passed into actual insanity—when a weak organ has given way under the strain put upon it. There is a class of persons with a peculiar, nervous temperament, who inhabit the border land between crime and insanity, one portion of which exhibit some insanity, but more of vice, and the other portion of which exhibit some vice, but a preponderance of insanity, and it is very difficult to form a just estimate of the moral responsibility of such persons, especially when we reflect upon the fact that moral feeling is a function of organization, and is as essentially dependent upon the integrity of that part of the nervous system which ministers to its manifestations, as is any other display of mental function. The writer has met with cases in which, as a result of parental insanity, there has been a seemingly complete absence of moral sense and feeling in the offspring, and this has been a true congenital deprivation, or a moral imbecility, so to speak; of course such children can hardly fail to become criminals. In this connection it is interesting to note that moral degeneracy often follows as a sequence upon disease or injury to the brain. A severe attack of insanity sometimes produces the same effect, the intellectual faculties remaining as acute as ever, while the moral sense becomes obliterated.

When such persons are acquitted on trial of a criminal act on the ground of insanity, they should be remanded to medical custody, and should never be set at liberty until the medical superintendent of asylums deem them fully recovered; but the commonest justice plainly indicates that such custodial restraint be of a medical and not of a penal nature. It is a very difficult thing for the laity to realize how sane a person may appear, who all the while has a greater derangement than was even suspected until something happens to elicit the evidence of it, such as an attack of illness or severe mental strain, and some unconquerable impulse seizes him, and some homi-

cidal or suicidal act results to the great surprise of every one. In the same manner inebriety often appears in maturity as a result of ill health, mental shock, etc., and it becomes an interesting question as to the degree of moral and criminal responsibility which attaches to inebriates, as inebriety often depends upon an abnormal organic development of the nervous system that has descended from generation to generation gaining in intensity until it manifests itself in active inebriety, and there must certainly be a modified responsibility when homicidal or suicidal acts are committed during periods of such abnormal cerebration. In such cases a criminal act may be committed in consequence of cerebro-mental disease, without any apparent lesion of the perceptive and reasoning powers. In these cases also, the mental disorder is of a sudden and transitory character, not preceded by any symptoms calculated to excite suspicion of insanity. It is a transitory mania, or sudden paroxysm, without antecedent manifestation, the duration of the morbid state being short and the cessation sudden. In these cases the criminal acts are generally monstrous, unpremeditated, motiveless, and entirely out of keeping, with the previous character and habit of thought of the individual. Such attacks are transient in proportion to their violence, and transition occurs in the completion of the act of violence. There is an instantaneous abeyance of judgment and reason during which period the person is actuated by mad and unconquerable impulses.

We will consider, finally, the medico-legal importance of epileptiform attacks, which may be partial in character, and which may not reach convulsive activity except so far as the mind is concerned. These attacks always display periodicity, and after the paroxysm there is an intermediate stage, during which, in most cases, the person remains in a confused state, perhaps for some hours, and is apt subsequently to retain only a vague and general notion of the preceding events. Thus in a homicide by shooting, the murderer would be likely to be roused by the sound of the pistol shot, and to remember it, although he would not very likely remember the altercation at all, or what passed between them. A case occurred recently of considerable interest from a medico-legal point of

view, in which a murder was committed during an epileptiform seizure, or rather, more strictly speaking, during a state of transitory moral epilepsy, which was the result of a previous sun-stroke, the immediate exciting cause being an attack of illness and the taking of a small quantity of alcoholic stimulus, which, it is well known, acts as a poison upon persons who have been sun-struck. This state of "moral epilepsy" is a morbid affection of the mind centres, which destroys the healthy co-ordination of ideas, and occasions a spasmodic or convulsive mental action. The will cannot always restrain, however much it may strive to do so, a morbid idea which has reached a convulsive activity, although there may be all the while a clear consciousness of its morbid nature. The case just referred to had complained of pains in the head and sleeplessness, which had displayed marked periodicity, and which had been accompanied with great irritability of temper, excited by trifles and seemingly unconnected with personal antipathies. As has been previously stated, the person alluded to had been suffering from quite a severe illness, and after taking a small quantity of alcoholic stimulus went out to walk. He met a friend with whom he had been familiar for years, and a discussion arose as to the respective merits of certain politicians, when the discussion becoming excited, the man pulled out a revolver and shot his friend. He then went in a confused and dazed state and sat for some hours on a dock near a river, and subsequently went home, and burst into tears and informed his wife of the sad occurrence, and gave himself up at the police station. There was no simulation of insanity by pretending to be incoherent, or by strange actions, and no attempt, either on the part of himself or wife, to pretend that the act was an insane one. There was, however, a total blank in the prisoner's mind respecting the events immediately preceding the pistol shot, which seemed to have aroused his attention at the time, and he had no recollection of the fact that he had sat on the dock for some time afterward, as he was seen to do. The writer was consulted as an expert, and upon ascertaining the prisoner's previous history, gave it as his opinion that there had existed for months previous to the occurrence a profound moral or affective derangement, which, from its marked peri-

odicity, was evidently epileptiform in character, and that the sudden homicidal outburst supplied the interpretation of the previously obscure attacks of recurrent derangement. There had evidently been induced by the sun-stroke in this case, an epileptiform neurosis, which had been manifesting itself for months, chiefly by irritability, suspicion, moroseness, and perversion of character, with periodic exacerbations of excitement, all foreign to the man previous to the attack of sun-stroke. It is well known among specialists in insanity that this epileptiform neurosis often exists for a long time in an undeveloped or marked form, and that this neurosis is, moreover, connected with both homicidal and suicidal mania. Such attacks are often noticed to occur periodically for some time before the access of genuine epilepsy. I have often witnessed, in cases under my charge, abortive or incomplete epileptiform attacks, where there were no convulsions, and where there was no complete loss of consciousness. I have noticed in such cases either a momentary terror, slight incoherence, a gust of passion, or a mental blank, the patient perhaps stopping in the middle of a sentence. The patient would then be himself again, quite unconscious of what had happened to him. Accompanying this confusion of ideas, may be, as I have remarked, instantaneous impulses, either of a suicidal or homicidal nature. Owing to the writings of Hughlings Jackson, Maudsley, Russell Reynolds, Hammond, Trousseau, Falret, Esquirol and others, epileptic vertigo is a recognized disease. There is abundant testimony to show that during such seizures persons may perform actions, and even speak and answer questions, automatically. There are numerous examples in the works of the above authors, proving that in an unconscious condition, persons can progress from odd or eccentric actions, to deeds of violence, suicide or murder—being unable to remember the circumstances afterwards, and therefore irresponsible for their actions. This class of patients I have always found irritable, easily excited, very emotional without adequate external causes, easily losing their train of thought, and often unable to collect or fix their thoughts. Such cases have told me that they felt themselves changed in character, and have acknowledged that they often felt impelled to strange and violent acts, by some

power which they could neither understand nor resist. Such patients may entertain delusions of fear and persecution, and commit criminal deeds as a result of such delusions. When such cases, in their terror or distress of mind, commit some violent deed, they either experience immediate relief, as was the case with one patient under my care, who was only relieved by suddenly breaking out a pane of glass, when his paroxysm would subside, or they continued in a state of excitement unconscious, or very imperfectly conscious, of the gravity of their acts. When they become conscious again, their memory is apt to be very uncertain as to preceding events. Griesinger says: "Individuals hitherto perfectly sane and in the full possession of their intellects, are suddenly and without any assignable cause, seized with the most anxious and painful emotions, and with a homicidal impulse as inexplicable to themselves as to others." Maudsley says: "Let it be borne in mind, then, that there are latent tendencies to insanity which may not discover the least overt evidence of their existence, except under the strain of a great calamity, or of some bodily disorder, and that the outbreak of actual disease may then be the first positive symptom of unsoundness." The question as to the degree of mental responsibility attaching to such cases is one of great interest to psychologists, and also to jurists, and one to which it is hoped, in the future, much more attention may be directed, than has been given to it in the past."

Mr. Cephas Brainerd, of New York, read a paper on some points touching law and medicine. I give you a full synopsis. He said:

The compliment involved in the invitation to read a paper before this society, which has been extended to me, must have had its origin in the kindly impulse of some friend; certainly not in the supposition that I possess any power to add to your stock of knowledge by the presentation of any acquisitions of my own, or by any process of original reasoning to throw light on the problems of society as discussed here.

An examination of the elaborate and able essays, already printed by members and friends of the Society, would quickly dispel any notions which a writer might entertain at the out-

set, of his ability to impress you with a display of his own knowledge and research.

At best I am but an "apprentice," and here, as yet, I am but a looker-on. My connection with the Society has been all too brief to make me anything but that. Suffer me then in that capacity to submit a suggestion or two of the most simple character, springing from my limited acquaintance with your work and its objects.

Two learned professions meet with common objects; the two professions whose daily service comes most nearly home to the business and bosoms of all men in the routine of common life. Surely the object of this Association of the two professions is not solely the simple but comparatively selfish one of acquiring a given quantum of knowledge, as the miser accumulates gold. Rather this is a branch or section of the great, the universal social science association of civilized lands, composed of the members of the two great and learned professions whose lines of labor most frequently touch each other as regularly pursued. Its past discussions show it to be an advocate of what is sometimes called a social science policy. This is well defined in one of the most remarkable of recent books, the letters and other writings of Edward Denison, M. P. He says (p. 206): "It aims at utilizing, for the purposes of imperial, national, municipal, and individual life, the great stores of knowledge in every department of philosophy and science, which the mental activity of the last half century has created and accumulated, but which have not yet been employed to diminish the suffering and increase the happiness of humanity at large." To this end how advantageous is the calm and dispassionate comparison of views between the two professions meeting in this Society. How essential their substantial agreement upon topics common to both, before the great stores of knowledge adverted to by Mr. Denison are really employed to diminish suffering and increase happiness. To be most usefully employed there must be an incorporation of the results of these accumulations in legislative action, and in the common practices of mankind. The largest possible circulation of the topical papers read here contributes powerfully and directly to the latter result, but only moderately, and I think

inconsiderably to the former. So far as my examination has extended, very little has been done or said here looking to practical legislation. Not that I design to suggest that the Society engage in the business of procuring legislation generally, though no reason has occurred to me why whithin reasonable limits it might not properly do so.

The time seems peculiarly favorable for obtaining definite legislative action guaranteeing these reforms in the law which the great advances in practical knowledge show to be desirable.

The limitations which some believed were set upon legislation, and which hedged about supposed rights are yielding to the needs of the time. This change in judicial view, and rule began some years since, but has recently become a settled principle of judicial action. Perhaps the strongest early manifestation appeared in the police cases as long ago as 1857 (*People v. Draper* 15 *N. Y. R.* 532) when our police was upon a better and more efficient footing.

It appeared again in 1865, when an attempt was made to overthrow the law which gives to parties whose property is destroyed by mobs, a right of action against the municipality where mobs hold sway. (*Darlington v. the Mayor* 31 *N. Y. R.* 165) All remember the strenuous opposition, founded on constitutional objections, that was made to the health legislation affecting the city (*See Met. Bd. of Health v. Heister.* 37 *N. Y. R.* 661, *and kindred cases*). Notwithstanding this opposition we have the improved health code. Cattle are no longer driven in large droves through the crowded streets, and slaughter houses have ceased to infect, infest and demoralize the town. The demands of the body of the people for improved modes of travel, as incorporated in legislative action, and sought to be satisfied by capitalists under legislative permission are no longer thwarted by claims of supposed private right. Such technical claims our courts hold are not to stand in the way of these improvements which the age really requires (*Rapid transit cases; not yet reported*). The disposition manifested by our Court of Appeals appears in the highest court in the nation. The legislative wisdom of some states provided, as was thought, for a better use of railroads in

the interest of all parties. Individual right again raised constitutional objections, and the Supreme Court in the Granger cases (94 *U. S. R.* 113-187) recognized and sustained the right of the body of the people to some consideration in the administration of *quasi* public trusts.

Some of these decisions may yet be subjected to criticism, but they will undoubtedly all stand the test of time, and trial, and they show that the current of judicial ruling in this country is contrary to the technical spirit, the over-squeamish regard for supposed private right which lies at the basis of the Wynhamer case here (3 *Kernans R.* 278) and *Alkyns v. Randolph* 31 *Vermont R.* 226) in the State of Vermont, which are the very quintessence of the chronic conservatism of the past.

It is doubtless safe to assume that this is not formed as a total abstinence society; that it was not organized for the purpose of joining in any temperance crusade. An examination of your records will show, however, that a considerable proportion of the papers read here, have treated of the effects of the use of alcohol upon men. A cursory examination of these papers has not disclosed to me any observation upon this use from the philanthropic stand-point, or any appeal to the class of considerations most in use among so-called reformers. The treatment has been wholly scientific or professional. The essays treat of "Alcoholism," "Methomania," "Dipsomania" as diseases, as forms of insanity.

Of "Methomania," one of your essayists says that it "is a manifestation of brain disease, and that brain disease involves general impairment of the mental faculties, and consequently a form of insanity. Any man drunk and absent from business that he knows to be important, committing a crime in that condition, should be treated not as a criminal but as a maniac."

Another of your essayists says: "In a criminal case the question must be carefully examined, for if the guilty party has had attacks of delirium tremens, if it is ascertained that he is a dipsomaniac, he ought to be confined in an asylum as any other insane, and no matter how well he may appear to be while confined, it is not till after a long time, probably ten years, before he can renounce spirits, or that he may be set at

liberty without danger to himself or to society. No matter how much he might promise, swear that he would not touch another glass, the inclination before that time is stronger than he; he cannot resist it as long as he can procure it."

The same essayist sets forth the results, near and more remote, of the use of alcohol as follows:

"Now in ninety cases out of a hundred, drunkenness is first contracted by invitation and politeness, for it is considered very impolite by some individuals to refuse to drink when invited to 'join in.' It soon becomes a habit, and then constitutes one of the most incurable diseases. Every additional glass is one more stitch in that other Nessus tunic, called chronic alcoholism, from which, when once entangled in its folds, it is impossible to come out, and Hercules-like, the drunkard dies in the most wretched agony.

The disease is not even ended by his death, but its influence extends from generation to generation, until the extinction of his race. Morel reports many examples of this fact. According to him the sequence is as follows:

First generation: Immorality, depravity, excess in the use of alcoholic liquors, moral debasement.

Second generation: Hereditary drunkenness, paroxysms of mania, general paralysis.

Third generation: Sobriety, hypochondria, melancholy, systematic ideas of being persecuted, homicidal tendency.

Fourth generation: Intelligence slightly developed, first accession of mania at sixteen years of age, stupidity, subsequent idiocy, and probably extinction of the family.

But quotations need not be multiplied. Putting aside all moral questions, all considerations philanthropic in their character, it has been shown by the essays before this Society, as it has been shown elsewhere, that certain uses of alcohol touch the civil administration, and the practice of the law at a great variety of points, but strikingly at the following:

1. As to testamentary capacity.
2. As to fitness to give evidence.
3. As to competency to contract obligations of a binding character.
4. As to general capacity for wise business management.

5. As to criminal tendencies.
6. As to responsibility for acts of a criminal character.
7. As productive of poverty and pauperism.

And as to all this matter the medical profession has brought from its store-house of facts and experience a vast array of information, and resting upon this a mass of professional conclusion which cannot be controverted or denied.

It may well be assumed that their call now is to the legal profession for the payment of that debt which Lord Bacon declares every one of its votaries owe to it, viz., for the intervention of the lawyer in aid of every proper movement for the modification or the cure of so great an evil. We are ready to take a position in regard to the proposed changes affecting the minutest details of the daily practice. We are not slow to discuss the question whether a summons signed by an attorney, or a writ in the name of the people, is the proper and convenient mode for instituting a suit, and rightly so. If any craft known to civilized society, throughout its long and continuously brightening history, has been ready with all its forces, natural and acquired, to serve the cause of progress, that craft is the law, and ready it has ever been to enter that service with neither staff nor scrip, nor money in its purse from those it thus serves. Surely the law should not be behind-hand in efforts to secure a mitigation, if not the eradication, of this curse upon civil and governmental administration.

Not as reformers, not as temperance men in the technical and narrow sense in which these words are used in every-day life, but upon the same principle, and in the same way and with the same ardor with which we enter upon the advocacy of any great reform in civil affairs. How many times have we all draughted and followed them through the legislature, at our own charges. How many times in the interest of society, but at our own cost, have we all taken part in efforts to procure what we thought good legislation, or to defeat bad.

Yet here is a practice which in its effects touches the lawyer more nearly than the members of any other profession save that of medicine. That profession has brought here the wealth of its learning, and laid it before the Society; it has done at least a part of its duty, but I have not observed in any of our

papers from my own profession any suggestions for a legislative scheme to cure the evil, to remove the wrong as touching the administration of the law. It seems to me this can properly be expected, not in any radical or ultra reformatory shape, but as digested by the calm reflection, matured by the large wisdom and experience, and sustained and approved by what Mr. Choate in perhaps the best of his public addresses termed "The Conservative Force of the American Bar."

It is not for me to do this, but it may not be improper to suggest the question whether any idea has been yet presented better than that which gives the law an executory principle by conferring a right of action in favor of the person injured by the acts or neglects of the drunkard against the seller of the liquor used by him. May I also suggest a radical inquiry as to the difference discoverable upon principles of statesmanship and constitutional law between the common bar-room and the gambling hell, or between the sale of liquor in the former and the sale of prussic acid and arsenic at the drug store? And if no difference can be discovered, why is not properly the same kind of legislation applicable to all?

Some suggestions made here looking to the subject of ventilation, as applied to public school buildings, indicate the prevalence of a sentiment among the members of the Society which perhaps justifies the additional observations which I desire to make. The members of the medical profession more than any other calling are brought into immediate contact with the poorer classes. Sore sickness is incident to every family, rich or poor, and perhaps especially incident to the destitute and ignorant; and in the ministrations of the "Doctor" it is a peculiar glory of the profession that none are neglected. On such occasions the physician sees the best side of human nature, the best feelings of the heart are aroused, and it is easy to infer from the condition of mind as exhibited by the lowest classes in their afflictions, the capacity for improvement and progress of which they are capable. No one doubts the civilizing effects of pure air and tidy, even if not artistic, surroundings. If any proof were necessary, the extraordinary experiment of Miss Octavia Hill, in which she was assisted notably by Mr. Ruskin, which resulted in the purification of some of

the worst and most debased dwellings in London and in the real civilization of their inhabitants, and which transformed those dwellings into interest-paying investments, when before they had been a source of loss, is sufficient proof. But while it seems to me that the medical profession, in and of itself, cannot accomplish the needed reforms in the crowded tenements, it can do so with the help of the lawyer if he will wisely use his means for influencing and framing legislation, his opportunities of touching public sentiment at so many points, and especially the frequent calls upon him by capitalists for advice in regard to the mode of treating property and disposing of investments. The two professions co-operating can accomplish almost any desirable result in this direction. Is it not then proper matter for consideration how much by legislation and how much by operation upon public sentiment can be done toward improving the dwellings of the poorest, and thus facilitating the practice of the physician among the destitute classes, and rendering his generous service more useful? Attention has not been given to the management of the commonest tenement houses as it should be; effort is not made to keep them cleanly and to keep their inhabitants in the same condition; how much can the Medico-Legal Society do in this direction?

But there is another matter connected with this suggestion as to which there should be legislation at once. In the opening of the upper part of the city for dwellings by the building of the elevated railroads, and in the desertion of a section of the city about the Battery by the more profitable classes of business, a field is opened for a reform which it is desirable should be accomplished.

No houses are now built, of a convenient character, which are within the reach of single families of laborers and artisans of the better class, if they are now to live anywhere in the city it must be in tenements more or less crowded. There is no reason why the sections of the city which I have specified should not be re-distributed or re-laid out so that small houses can be conveniently built having abundance of light and air, which, in their rentals would be within the reach of the average mechanic for his single family. The advantage to civili-

zation—to good neighborhood—to health—to every department of social economy—secured by such a reform, would be incalculable.

Let another matter be brought to your attention. It is perhaps mainly to be touched by public sentiment; but, in that regard, public sentiment should be educated. The police courts and the justices' courts bring the civil institution, we call the State, into immediate contact with the largest body of our people—those the least educated—those who know least of the principles upon which a state is organized. Their knowledge of the law, of its administration, and its practice, is derived almost wholly from these courts. If they are to respect the institutions of the country, they are to learn to respect them from the administration of law as seen by them. They never see, except at rare intervals, and in a casual way, the higher courts of the country. They have no more idea of the appearance of the Supreme Court of the United States, of the dignity of its Justices, the simple majesty of its proceeedings, the solemnity of its debates, and the integrity which characterizes it, than they may have of the local disadvantages as a place of human habitation of the moon. All they know of the law, they know from the police and civil justice, and from the lawyer who practices before him.

Then I say, with the educated classes, and especially with the members of these two professions, one engaged in the administration of law, and the other dealing with these poorer classes to such a vast extent under circumstances when they are most susceptible, there should be a decided, a positive, a persistent effort to elevate the condition of these courts. I make no criticism upon any man now presiding in them, but I do say that they should be conducted with a dignity, with a sobriety, with a steady reference to the best principles of the law and to the best principles of administration such as is not to be found in all of them at the present time. The judge upon the bench should understand that he represents the State in one of its highest and most important forms of legal administration.

The controversies of the poor about a few dollars are more important to them than the controversies of the rich over

their thousands, and their controversies should be treated with the same consideration, with the same gravity with which the Chief Justice of the Supreme Court treats a controversy before him. If this were done, these courts as a means of elevating society, and of improving morals, of keeping peace, would be of incalculable value. Our duty here is, by the creation and cultivation of a proper public sentiment, to so elevate and to ennoble them that they become constant and healthful teachers. A justice in one of these courts, whose conduct is what I have indicated it should be, ought to be looked upon by society as one of its greatest benefactors. He should not be spoken of with contempt. His education, his conduct, his surroundings, should be such that he can be welcomed to any society which he desired to enter. The terms "Civil" and "Police" Justice should not be on the lips of certain of our people, terms of contempt, but they should be an epithet of honor, and when we come to that we shall have made a long step onward in the elevation of man.

This is a little outside of the ordinary line of your essays: it will not, however, do hurt, possibly it may be of some little good.

Law and medicine in their administration deal with individuals. The lawyer acquires a profound appreciation of the value of individual and personal right. The physician has an exalted estimate of the single man,—not only as possessed of mental capacity—of an immortal soul—but as possessed of a body "fearfully and wonderfully made" which is the subject of the profoundest study on the part of those who desire to be worthy of their calling. It is the valuation in both professions of the individual man which gives life and force and moral elevation to their activity and which invokes the exercise of their best faculties. What I have said touches the value of the individual and goes to its just appreciation, and I would fain see realized by all the force of the promise and declaration of God Himself, when He says, "I will make man more precious than gold—even a man, than the golden wedge of Ophir."

NEUROLOGICAL SOCIETY.

The following cases have been reported to the Society:

By Dr. E. C. Seguin: Bulbar Paralysis.

(A typical case of labio-glosso-pharyngeal paralysis.)

Male, aged 67. Patient of Dr. McCready, seen in consultation Sept. 25th, 1876. He was a steady drinker. Probably no syphilis. At least a year ago great difficulty in swallowing began, especially of liquids, and it steadily increased. In the winter of 1875-6 Dr. McCready was suddenly called, and found patient in extreme and dangerous orthopnœa, without cardiac or pulmonary cause. The respiration was of the Stokes-Cheyne type—a few rapid acts of breathing succeeded by a long pause, with shallow and short inspirations. Ever since, breathing has been more or less of this type. Children have noticed staggering gait and stooping in the last few months, and in the same period a degree of imperfection in articulation has shown itself.

On Sept. 19, partial right hemiplegia without loss of consciousness. Dr. McCready saw patient shortly afterward, and made sure that although the power of articulation was nearly abolished, there was no aphasia. After this attack the breathing became much more difficult, and deglutition has been nearly abolished; almost nothing being swallowed until to-night. Food has been administered per rectum.

I found the patient in a state of semi-stupor, from which he could be roused. The pupils were normal; expression dull; lower part of face expressionless. Mouth hangs half open, and its right corner and the cheek drops. The breathing is shallow and rapid for a few seconds, then almost imperceptible (Stokes-Cheyne type). The grasp of both hands is weak, that of right hand weakest. In attempting to talk patient makes great effort, but the sounds are almost inarticulate and guttural. He names daughters, days of week, etc., and seems not to be at all aphasic. Labial sounds are best made. Cannot distend cheeks with air or whistle, but purses lips fairly well. Tongue is only partly projected; it shows neither atrophy nor tremor.

Autopsy showed uniform atrophy of cerebrum, sub-arachnoid effusion, *etat criblé* in extreme degree. No other lesion appreciable to naked eye.

The following case of epithelioma (colesteoma) of the cerebral dura mater was presented by Dr. J. C. Shaw, of Brooklyn, N. Y. The lady from which these specimens were taken was a patient of Dr. Mathewson's. I made the post-mortem. The history of the case I shall give briefly, and only such points as are of interest to us, as the case will be reported at full length elsewhere, by Dr. Mathewson.

Mrs. C., aged 27, married. Was seen first Nov. 16, 1876, having had suppurative inflammation of middle ear for years; for past few days has had pain in left ear, and examination shows hard whitish polypi projecting through perforation in the drum membrane, otherwise condition good. The pain and discharge continued during the winter. On March 18, 1877, she complained of pain in the occipital region. There was no swelling or tenderness over mastoid. She was seen in consultation by Dr. Roosa, who thought there was no evidence of disease of mastoid. After a short time, Dr. Mathewson performed Wild's incision, hoping that it might relieve the pain, as the patient was now becoming much emaciated from her sufferings. To his astonishment, he found a very large hole in the mastoid, which contained pus and broken-down bone. She went on in this condition until she died—complaining, for many weeks before death, of diffuse intense headache, and had to be kept continually under the influence of morphia. She presented no cerebral symptoms other than the headache.

In removing the brain, there was seen projecting from the floor of the skull, just over the petrous portion of the temporal bone on right side, a small whitish tumor about the size of a hazel nut, and which felt soft; it made a depression on the under surface of the temporo-sphenoidal lobe. The internal surface of the drum covering the whole of the temporal bone, extending back to the occipital and down into the foramen magnum, and over the wing of the sphenoid and sella turcica presented an opaque, dull, soaked appearance, and was somewhat detached from the bone.

On removing that part of the dura covering the temporal bone, it was found that the whole mastoid and petrous portion

of the temporal bone was gone, and the removed specimen was covered with a lot of offensively smelling pus.

Let me premise by saying that this work was done by me in the Neurological Department of the School of Histology in this city, under the direction of our president.

The points of interest connected with this case are:

What was the starting point of this growth? How is it we had no neuralgia (of the facial branches) of the fifth nerve? Why had we not those grouping of symptoms which we designate as Meniére's disease?

In answer to the first of these questions, it appears to me that the growth must have had its origin in the middle ear, and extended to the dura, and as it progressed and involved the dura lining the mastoid, cutting off its nutrition and causing slow death of the bone, and this appears to me to be the reason why the ordinary symptoms of inflammation of the mastoid were not present.

Dr. E. C. Spitzka presented the following specimens illustrative of general paresis of the insane:

The Doctor referred to the fact that he had offered a contribution to the study of general paresis, at the February meeting, and stated that as on that occasion he merely endeavored to establish a parallelism between lesions and symptoms, he had omitted giving the minute histology of the changes in this disease. It was his purpose to fill up the gap this evening. He began by asserting that his researches permitted him to give a patho-anatomical definition of the disease, he would term it a *progressive periencephalitis* with an inconstant factor of *diffuse leptomeningitis*, and an unessential one of *pachymeningitis*. It was not a gradually established and progressive process, but was characterized by a series of fluxionary hyperæmias, occuring at intervals, becoming more and more aggravated, until arterial and capillary stases of an intense degree were produced at each attack, until at length, this vascular change reached a degree comparable to a capillary apoplexy, which usually terminated the history of the case, unless intercurrent affections intervened. Furthermore, as this hyperæmia was provoked by a paralysis of the muscular coat of the vessels, however evan-

escent in character, he would term it a vaso-motor affection. Specimens were exhibited from a patient, who had died at the height of a maniacal attack, in incipient paresis. The vessels were filled to distension with blood discs, whose outline was clearly distinguishable. The adventitia and contiguous neuroglia was infiltrated with a material, whose exact chemical nature was not ascertained, but which stained with a beautiful pink flush in carmine, the infiltration was diffuse, and not sharply demarcated, protagon spheres were found in the adventitia, and the diffuse infiltration was probably a diffusion of protagon, or of a derivative of protagon. Similar spheres could often be found in the pericellular spaces around the large pyramidal nerve cells, and they were supposed by him to be the result of retarded lymph flow, and to be organic precipitates from the products of tissue metamorphosis.

A second series of sections and freshly prepared specimens, from patients further advanced in the disease, showed how the corpuscles had become fused into an opalescent mass, staining deeply in carmine and hæmatoxylin, occasionally a whole capillary district was found the seat of this stasis, and in others, the mass was seen undergoing separation, into oval, cylindrical, or round fragments, which, as they floated on in the channel, became impacted at the bifurcation of vessels, to undergo still further subdivision, until they were divided into fragments sometimes smaller than a red blood-corpuscle. Dr. Spitzka had never observed these masses to form in vessels of a larger calibre, than those vertical arterioles, which enter the cortex from the pia mater. He hence deprecated terming the masses seen in the stage of resolution, "emboli." Rarely did they produce obliteration of a vascular area, unless secondary changes in the vascular walls (which invariably took place latterly) occurred. Where obliteration of an arteriole could be demonstrated, (usually at the depth of the sulci) the ganglionic cells were found granular, atrophic, or even diminished in number, their place being occupied by lymphoid or neuroglia corpuscles. This condition of the blood was a true stasis. The agglutination of the blood discs in rolls, was not to be ranked with the lesion; in fact, the latter was not neces-

sarily pathological. Many of the specimens exhibited the permanent changes of the nerve elements, especially the atrophy of the spindle-shaped cells of the fifth cortical layer, the increase of lymphoid bodies along the lines of the vessels. This increase was frequently so marked that the vessels were almost hidden from view by the numerous adventitial and peri-adventitial free lymphoid bodies. These bodies, once exuded, did not remain stable, but underwent a closely demonstrable metamorphosis into fixed connective tissue cells. They were irregular, with a thin protoplasm, one or two distinct nuclei, and numerous, delicate, stiff processes; many of these bodies appeared spider-shaped, and hence they have been termed "Spinnenzellen" by Deiters. Other authors, as Boll and Jastrowitz, have termed them "Saftzellen." Now, these bodies in certain instances underwent a peculiar change; one of the processes, attached at one extremity to the spider-cell, by the other to the outer aspect of a delicate vascular wall, could be seen to become hollow from the vessel, towards the cell; in others, the process was distinctly tubular, and the cell-body itself formed a contamination of this tube; and in still others blood corpuscles were found massed in the new channel.

The observation of Lubimoff, that in general paresis a *new formation* of capillaries occurs, was thus confirmed, although Dr. Spitzka had at first been inclined to doubt such an occurrence. Still he would not attribute any important role to this production of new vascular tracts, as they could never vicarate for those destroyed. The adhesion of the pia to the cortex, so common in cases dying from the disease, was shown to depend on an increase of the "Stutzfasern" of the outer cortical layer, and the development of fixed connective tissue cells therein. In one case a whole column of converging fibrillæ could be traced to some depth in the cortex, rooted in the pia. As a result of the increased density of the neuroglia fibrils, spaces were demarcated in the neuroglia which contained a material also found in normal brains, of a slightly different refractive index than the surrounding tissue. This appearance became much more marked, the longer the specimen was hardened,

and although Dr. Spitzka considered it to represent a deviation from the normal bio-chemical processes, yet its interpretation was still doubtful.

He then exhibited specimens of the medulla oblongata; several large sections from a patient who had manifested the symptom "alalia" revealed a sclerosis of a very limited extent. The doctor urged that this case illustrated how independent of the *size* of a lesion the resulting symptoms were, provided an important locality was effected. In this case, although the sclerosis was merely just visible to the naked eye, it had totally obliterated the raphe medullæ oblongatæ. Through this area pass those fibres which place the automatic nucleus hypoglossi under the control of the hemispheres. This path being interrupted, explains how voluntary control of the lingual motions was suspended, while trophic disturbances and the automatic motions (as in chewing) were absent, for the muscles and nerve-roots themselves were not markedly abnormal. The Doctor did not discuss the spinal lesions, as there would be a demonstration of these by another gentleman at the next meeting.

Dr. Seguin asked Dr. Spitzka whether he had heard of the researches of a recent writer in the "Centralblatt," who stated that marked lesions occurred in the facial and abducens nuclei which were often overlooked.

Dr. Spitzka replied that he himself had hundreds of sections from this region in his possession; that he had found lesions, and that Meynert and others had found similar conditions many years ago.

Dr. Seguin: This writer's special point was that the degenerated area of the hemispheres and lower centres were continuous.

Dr. Spitzka: I have not read the paper referred to, and must ask Dr. Seguin whether this continuousness of the degenerative areas was described as similar to secondary degenerations, for he had called attention to such a relation nearly a year ago.

Dr. Seguin thought that the writer had not referred to this but to a primary relation.

Dr. Spitzka stated that he had examined successive sections

from the third ventricle down to below the pyramidal decussation, and had satisfied himself that there might be a perfectly healthy interval between a lesion of the cord and medulla on the one hand and the higher lesions on the other. He further stated that to demonstrate this was not difficult, as even if the investigator did not possess a microtome, he could, if familiar with the normal anatomy of the parts, pick out the suspected locality and obtain smaller but equally conclusive sections freehand.

"The Doctor wished it to be understood that his description only applied to the typical form of progressive pareses, not to those varieties of paralytic insanity due to alcoholism, syphilis, and secondary to spinal disease. As to the vascular condition of capillary stasis it was found in alcoholism of long standing, as well as in those dying from puerperal fever. There was nothing contradictory in this, as alcoholism often passed into paresis, and that form, occurring with puerperal fever, seemed to be incompatible with the conditions of life, and did not enter into our calculations accordingly. He had frequently found vascular engorgements almost reaching the degree of stasis in maniacal patients, and perhaps the fact that maniacal attacks occur in the puerperal condition may not be without some relation to the condition of the vessels in those dying of puerperal fever."

Dr. Seguin exhibited sections of the medulla oblongata of a male patient aged 67 years, who had died after exhibiting many symptoms of lesion of the medulla, such as imperfect deglutition and articulation, Stokes-Cheyne respiration, staggering gait, and who also had right hemiplegia without aphasia shortly before death.

The autopsy showed an uniformly atrophied wet brain, with *etat-criblé*, but without any gross lesion capable of causing symptoms. The sections of the medulla oblongata, however, show microscopic lesions which make the case quite clear; the nuclei of origin of the hypoglossus, pneumogastric, and glosso-pharyngeal on both sides, are in a state of degeneration and atrophy. Few cells are left in the hypoglossal nuclei, and many cells in the vagus and glosso-pharyngeal nuclei are filled with granulations. The case will soon be published in full.